

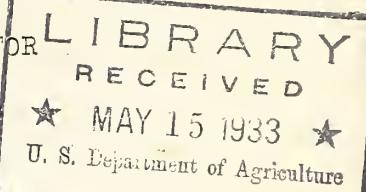
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WHAT THE BUREAU OF BIOLOGICAL SURVEY IS DOING FOR
RABBIT BREEDERS

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At Fontana, in the southern part of California, which was at one time the center of domestic-rabbit production in the United States, the Bureau of Biological Survey, of the United States Department of Agriculture, maintains a rabbit-experiment station. Establishment of the station, in 1927, was made possible through the cooperation of rabbit breeders, who furnished the stock, and through the public-spirited interest of the Fontana Farms Company, which furnished the land, buildings, and equipment. The work is still conducted in this territory, but the fundamental principles of rabbit raising there developed are applicable in any section of the country. At present the rabbit station has facilities for handling 250 breeding animals, which are kept strictly for experimental purposes.

Very little has thus far been published on the results from the experimental work. This is for the reason that at the beginning of this work few facts were known about proper methods of raising rabbits. The trail had to be blazed in a new field, and well-established facts had to be obtained before any information could be published. This was especially important in dealing with a growing industry so favorable to highly promotional schemes as is rabbit raising. Accuracy necessitated checking and rechecking the results of the experiments. Some idea of the extent of the Government's experimental undertaking can be gained when it is considered that just one part of the work includes weighing each doe and her young every week and recording the data. It requires time to analyze properly the volume of data thus assembled.

Carrying on the studies in this manner has insured the validity of the results and the reliability of any information that might be published by the Department. The following facts have thus been determined:

- (1) About 30 pounds of barley or oats and 115 pounds of alfalfa hay are required annually to keep a mature New Zealand buck at a satisfactory breeding weight.
- (2) Approximately 300 pounds of feed a year are required to maintain each doe and to raise her four litters to eight weeks of age when hay constitutes 60 percent of the ration.
- (3) Oats and barley are of about equal nutritive value in the concentrate ration.
- (4) Best results are obtained with breeding does when about 60 percent of the ration is made up of good quality alfalfa hay.

(5) Finely ground dry feeds are not palatable to weaned rabbits, but are readily consumed when moistened.

(6) Dampened feeds will produce as good gains as feed in pellet form containing the same ingredients.

(7) Government investigations seem to justify the general statement that the narrow nutritive ratio of 1 part of digestible protein to approximately 3.8 parts of digestible carbohydrates and fats is the most satisfactory for does sucking young.

Further experimental work on the most desirable nutritive ratio has been encouraged by information obtained at the Rabbit Experiment Station during 1932 from the analysis of rabbit's milk. Most farmers have experienced the difficulty at one time or another of persuading a cow to give down her milk. This is a tame occupation compared with that of getting a doe into the same frame of mind. After much arduous labor and restraint of emotions, a sufficient quantity of rabbit's milk was obtained for analysis, and this yielded the following facts, which are of great importance to breeders in determining feed requirements of the rabbits:

Rabbit's milk contains 34.66 percent solids. The ash comprises 2.21 percent; fat, 16.6 percent; protein, 15.10 percent; and milk sugar 0.75 percent. Compared with cow's milk, rabbit's milk contains more than 2-1/2 times as much total solids, slightly less than 4-1/2 times as much fat, about 4-1/3 times as much protein, more than 3 times as much ash, and only about 1/6 as much milk sugar. The nutritive ratio of rabbit's milk is 1:2.5; of cow's milk 1:3.9.

Nor is research on rabbit fur being neglected. A microscopical study is being made of the density and quality of the fur of rabbits of various ages, and of the quality of skins taken at different seasons, and an effort is being made to determine the genetic factors that control these valuable characteristics. Investigations are also being conducted on the relative growth, thickness, and length of rabbit fur, and on the variability and density of the guard hairs.

In an endeavor to produce a white rex strain of rabbits with exceptional meat qualities a White Flemish buck was mated to an Agouti Rex doe. The young, as was to be expected, were all agouti or gray, and normal haired. Young does thus obtained were mated back to a Flemish Giant buck. At present the station has 30 young from these matings. Systematic matings will be continued until the rex and the white are combined in the same individual and a body conformation has been developed comparable with that of the best strains of rabbits in the meat type.

During this past year the Bureau of Biological Survey in cooperation with the Bureau of Agricultural Economics set up market grades of rabbit meat similar to those already in use for beef, mutton, and pork. These

standards prescribe weight limits for broilers, fryers, and roasters, and fix specifications for prime, choice, and commercial grades. The public is thus enabled to rely upon the quality of the rabbit meat purchased. This marks a long step forward towards popularizing rabbit meat.

No discussion of the Biological Survey's work in rabbit production would be complete without summarizing the Bureau's attitude on the unscrupulous rabbit-promotion schemes that have been and still are rampant in many parts of the country. These are considered highly detrimental to the permanent development of the rabbit-raising industry. Real rabbit breeders are of the same frame of mind on this matter as are the Government specialists. The Biological Survey recognizes the economic importance of the rabbit industry, but recognizes also that it can develop properly only when established on a reliable basis. The rabbit business is here to stay and to increase, but its development must result from the intrinsic value of its products in competition with other similar products, and not from the activities of unscrupulous promoters.

1. The first step is to identify the main components of the system. In this case, the system consists of a central processing unit (CPU), memory, and a display. The CPU is responsible for executing instructions, memory stores data and instructions, and the display is used to output visual information.

2. The second step is to identify the data flow between the components.

3. The third step is to identify the control flow between the components.

4. The fourth step is to identify the data structures used by the components.

5. The fifth step is to identify the algorithms used by the components.

6. The sixth step is to identify the data types used by the components.

7. The seventh step is to identify the data formats used by the components.

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